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(54) Prescription diet composition for pet animals.

(57) The present invention provides e prescription diet composition containing e poly-unsaturated fatty acid such e γ-linolenic acid, α- linolenic acid and docosahexaenoic acid, and/or biotin, and an antiflatulent such as e lactic acid bacterium, a bifid bacterium, a butyric acid bacterium and e bacillus. The prescription diet composition is useful for the prevention and treatment of pet dermatosis.

EP 0 609 056 A2

Background of the Invention

The prasent invantion relates to a prescription diet composition heving prophylactic and therepeutic affect ageinst dermatosis of pet animals.

R cently, along with longar lifa spans of pat animals as a result of Improvemant in vaterinary medicine and the trend toward Europaanization of pet food, as well as tha unnatural breeding anvironment of pat animals without regard to their nature, Increasa in tha incidance of adult disaases and diseases caused by metabolism disorders of pet animals hes baen increasad.

Among from thasa disaasas, darmatosis is outwardly observable. Darmatosis aasily bacomas chronic, and oftan requires long-term traatmant.

Tha treatment of dermatosis usually involves intramuscular or subcutaneous injection, oral administretion or extarnal application of antibacterial agents, steroids and tha like. However, darmatosis is usually difficult to cure in a short period of time with the drugs alona. Moreover, long-term administration of tha drugs oftan results in occurrence of sida effects such as secondary edranal cortical hypofunction, gastrointestinal disorders such as ulcars and bleeding, nephrotoxicity and chill of tha infection.

It is known that since daficiency of assential fatty acids and biotin is tha main causa of canine darmatosis, incorporation of such ingradients into pat foods is effectiva against canina dermatosis [Fromagaot, D. et al., Rec. Med. Vet. 158, (12), 821-826, 1982]. Also, in cats a savera deficiancy of Δ-6-desaturasa inhibits tha conversion of linolic acid into γ-linolenic acid, and incorporation of γ-linolanic acid into pet foods is known (Japanese Publishad Unexaminad Patent Application No. 149054/86). Furtharmore, tha activity of Δ-6-desaturasa in dogs is clearly attenuatad by aging and diseases such es hepatic diseases and diabatas (Wolter, R.R., Woltar'a Canina and Feline Nutrition Science, p.71, published by Nihon Rinsho Co., 1991), and thus tha incorporetion of poly-unsaturated fatty acids such as dihomo γ-linolanic acid, erechidonic acid, alcosapentaenoic ecid, γ-linolenic acid and the lika into canina and felina pet foods is known (Japenese Published Unexaminad Petant Application No. 215245/89). Neverthelass, tha effect of such pet foods is not yet satisfactory from tha point of viaw of the prophylectic or therapeutic treatmant of canina and felina darmatosis.

Tha usa of antiflatulents for tha purpose of prevention and treatmant of diarrhea and loosa passage is known (Japanese Published Unexamined Patent Application No. 118827/76, etc.), but their use for the purposa of prophylectic or therapeutic treatment of pet dermatosis is not known.

Summary of tha Invantion

An objact of tha invantion is to provida a prescription diat composition for pat animals, which comprises an antiflatulent; and at least ona of poly-unsaturatad fatty acid and biotin. Anothar objact of the presant invention is to provide a method for prophylactic or therapeutic treetment of darmatosis in a pet animal which comprises having tha pet animal ingest the prescription diet composition.

Datallad Description of tha Invention

The poly-unsaturated fatty acid to be contained in tha prescription diet composition of the present invantion includes, for example, an ω3- or ω6-type essantial fatty acid. Particularly preferred ara γ-linolenic acid, α-linolanic acid, eicosapentaenoic acid, docosahexaenoic acid (hereinaftar referred to as DHA), etc. The γ-linolenic acid, α-linolenic acid, eicosapentaanoic acid and DHA, etc. may ba originated from any sourca. Specifically, tha γ-linolanic ecid may be derived from evening primrosa oil, a microorganism belonging to tha ganus Mortierella or Mucor, an algae belonging to the genus Euglena or Chlorella, or from axtrects thareof. Tha α-linolenic acid may be derived from seeds of plants such as Perilla ocimoidis var., Perilla crispa ocimoidis, L., Linasaed, rape seads, soybaan, atc. or from axtracted oils thareof. The aicosapentaanoic acid end DHA may ba derived from the oils of fishes such es sardines, bonito and tuna, from a microorganism balonging to tha genus Mortierella, etc. or from extracted fluids thereof. Tha polyunsaturated fatty acid to be contained in tha prescription diat composition of the present invention may ba in a free form or in tha form of a salt or aster. The salt may be a non-toxic metal salt, for exampla, sodium salt, potassium salt end calcium salt, and tha estar includes, for exampla, methyl ester, ethyl ester or tha lika.

The biotin, or vitamin H, to be contained in the prescription diat composition of the presant invention may ba eith r synthesized or extracted from a yeast, a microorganism belonging to the genus Bacillus, Escherichia or Corynebacterium, a plant, an animal organ, or a Chinesa herbal m dicine such as jumi-haidokuto, shofusan and toki-inshi.

The antiflatulent to be contained in the prescription diet composition of the present invention comprises materials having an action of suppressing the growth of harmful intestinal bacteria and/or of accelerating tha

growth of beneficial intestinal bact ria. For example, cells of a bacterium selected from lactic acid bacteria such as Lactobacillus acidophilus, Streptococcus fa calis, Lactobacillus bulgaricus, Lactobacillus casei, tc.; bifid bacteria such as Bifidobacterium bifidum, Bifidobact rium longum, Bifidobacterium brave, Bifidobacterium adolescentis, Bifidobact rium pseudolongum, Bifidobacterium th rmophilum, etc.; butyric acid bacteria such as Clostridium butyricum, etc.; bacillus such as Bacillus natto, Bacillus toyoi, and the like, as well es treated cells of the bacterium are mentioned. The traated cells include, for example, washed cells, dry cells, freezed cells, freeze-dried cells, acetone-dried cells, organic solvent-treated cells, surfactant-treated cells, lysozyme-treated cells, ultrasonically treated cells, mechanically disrupted cells, or the like.

The pet animals which may ingest the prescription diet composition of the present invention include small domestic animals such es dogs and cats.

The concentration of the poly-unsatureted fatty acid in the prescription diet composition of the present invention is 0.5 - 50 wt%, preferably 1 - 25 wt%. The concentration of the biotin is 0.01 - 1.0 wt%, preferably 0.04 - 0.4 wt%. The concentretion of the antiflatulent is 10^6 - 10^{10} cells/per gram of the prescription diet composition (0.00001 to 10 wt% when calculated as dry cell weight).

In addition to the above-mentioned active ingredients, inactive auxiliary agents may be contained in the prescription diet composition. In order to enhance the effect of the entiflatulent, oligosaccharides such as fructo-oligosaccharide, soybean oligosaccharide, xylooligosaccharide, Inulooligosaccharide and lactulose may be added. Also, amino acids such as methionine and taurine; vitamins such as vitamin A, vitamin B_2, vitamin B_6 and nicotinic acid; end zinc, which are known to be effective in treating dermatosis, may be added. Furthermora, for a nutritional standpoint, yeast extract, dry milk, proteins, enzymes, inorganic substances such as calcium, magnesium and phosphorus, nucleic acids, essential fatty acids such as linolic acid may be added. For good tasty, salts such as sodium chloride, organic acids and sweeteners such as sugar may be added; for the purpose of formulation of the prescription diet composition, emulsifiers such as enzymolytic lecithin, excipients such as lactose, cyclodextrin, grains, starch and calcium carbonate may be added; and for stability during transportation and storaga, antioxidants such as vitamin E, β-carotene, vitamin C and lecithin may be added.

The concentration of these inactive ingredients in the prescription diet composition of the present invention is 0 - 99.99 wt%, preferably 5 - 95 wt%.

The prescription diet composition of the present invention may be used in combination with dermatotherapeutic medicines such as antibacterial agants (e.g. lincomycin), antipruritic agents (e.g. prednisolone), analgesics (e.g. salicylic acid), antiinflammatory agents (e.g. prednisolone), antiallergic agents (e.g. hydramine) and adrenal cortical hormone preparations (e.g. prednisolone), for the purpose of heightening the therapeutic effects of these medicines.

The prescription diet composition of the present invention may be ingested by a pet enimal in the form of a powder, granules, pellets, tablets, a paste, an aqueous solution, or the like, either alone or as a mixture with feeds for pet animals.

The amount of intake of the prescription diet composition of the present invention per animal per day is preferably 0.1g - 2.5g for pet animals having a body weight of less than 5 kg, 0.2g - 5.0g for pet animals having a body weight of 5 kg or between 5 and 10 kg, 0.3g - 7.5g for pet animals having a body weight of 10 kg or between 10 and 15 kg, and 0.5g - 20g for pet animals having a body weight of 15 kg or above. The number of intake times is not particularly restricted, so long as the desired effect is manifested, but the daily intake times are praferably divided into two or mora aliquots.

Examples of daily intake amounts of the prascription diet composition of the present invention are given below.

Pet animals having a body weight of less than 5 kg

γ-linolenic ecid	4 - 250 mg
Biotin	0.05 - 10 mg
Bifid bacteria	0.1 μg ~ 100 mg as dry cell weight (10^6 - 10^{10} calls per gram of the composition)

Pet animals having a body weight of 5 kg or between 5 and 10 kg

γ-linolenic acid	8 - 500 mg
Biotin	0.1 - 20 mg
Bifid bacteria	0.1 μg ~ 100 mg as dry cell weight (10^6 - 10^{10} cells per gram of the composition)

Pet animals having a body weight of 10 kg or between 10 and 15 kg

γ-linolenic acid	12 - 750 mg
Biotin	0.15 - 26 mg
Bifid bacteria	0.1 μg ~ 100 mg es dry cell weight (10^6 - 10^{10} cells per gram of the composition)

Pet animals having a body weight of 15 kg or above

γ-linolenic acid	20 - 2,000 mg

Biotin 0.25 - 32 mg
Bifid bacteria 0.1 µg ~ 100 mg as dry cell weight 10^8 - 10^{10} cells per gram of th composition)

Prophylactic and therapeutic effacts against pet dermatosis are produced by having pet animals ingest th prescription diet compositi n of the present invention.

The mechanism of the prophylactic and therapeutic effect is not completely clarified. It is considered that since the intestinal bacterial flora is improved by tha antiflatulent, and since the orally ingested poly-unsaturated fatty acid and/or biotin are less decomposed and less assimilated in the intestine and more effectively absorbed in the intestine, improvement in metabolism of fatty acids produces prophylactic and therapeutic affect against dermatosis, etc.

The present invention is described in the following Examples, Reference Examples and Experimental Examples.

Example 1

A 420g portion of flaky "Linox" (product of Idemitsu Petrochemical Co.: dried cells of Mucor bacteria containing 10% γ-linolenic acid; and the same product wes used in the Examples hereinafter) was finely divided in a mortar to less than 100 mesh. To the resulting granules wera added 80g of "Rovimix H-2" (product of Nihon Roche Co.; biotin content 2%; and the same product was used in the Examples hereinafter) which had been passed through a 100 mesh sieve and 500g of "Korolac D" (product of Nisshin Flour Milling Co.; containing 10^9 cells or more of Bifidobacterium pseudolongum SS-24 strain per 1 gram of the product; and the same product was used in the Examples hereinafter), and the mixture was thoroughly mixed with a rocking mixer to obtain the prescription diet composition of the present invention.

Example 2

An 80g portion of "Rovimix H-2" which had been passed through a 100 mesh sieve, 500g of "Korolac D" and 420g of lactose (product of Megure Co.; tha same product was used in the Examples hereinafter) were adequately mixed together with a rocking mixer to obtain the prescription diet composition of the present invention.

Example 3

The prescription diet composition was prepared by the same method as described in Example 1, except thet 420g of α-linolenic acid powder (cyclodextrin clathrate powder containing 20% α-linolenic acid) produced according to the method described in Japanese Published Unexamined Patent Application No. 41395/84 wes used instead of "Linox".

Example 4

The prescription diet composition was prepared by the same method as described in Example 1, except that 420g of DHA powder (cyclodextrin clathrate powder containing 14% DHA) produced according to the method described in Japanese Published Unexamined Petent Applicetion No. 41395/84 was used instead of "Linox".

Example 5

The prescription diet composition was prepared by the same method as described in Example 1, except that 500g of "Biofermin for animals" (product of Biofermin Seiyaku Co.; 10^9 cells of Streptococcus fecalis and 10^9 cells of Lactobacillus acidophilus per 10g) was used instead of "Korolac D".

Example 6

The prescription diet composition was prepared by the same method as described in Example 1, except that 500g of "Miyari cell powder for incorporation" (product of Miyarisan Co.; containing 30 mg of Clostridium butyricum per 1 gram of the product) was used instead of "Korolac D".

Reference Example 1

A 420g portion of flaky "Linox" was finely divided in a mortar to less than 100 mesh. To the resulting gran-

ules w re added 80g of "Rovimix H-2" which had been passed through e 100 mesh si v and 500g of lactose and the mixture was thoroughly mixed with a rocking mixer to obtain e compositl n.

Reference Exemple 2

An 80g portion of "Rovimix H-2" which had been pessed through e 100 mesh sieve end 920g of lactose were edequetely mixed with e rocking mixer, to obtain e composition.

Reference Example 3

A 0.8g portion of "Rovimix H-2" which hed been pessed through a 100 mesh sieve end 999.2g of lactose were edequetely mixed with e rocking mixer, to obtain e composition.

Reference Example 4

A 500g portion of "Korolac D" which had been pessed through e 100 mesh sieve end 500g of lactose were adequately mixed with a rocking mixer, to obtain e composition.

Experimental Example 1 Prophylectic effect in dogs

Eighteen household-bred dogs having a body weight of 5.0 ± 1.0 kg and with e history of dermatosis were arbitrarily selected end divided into 3 groups, A, B and C, each consisting of 6 dogs. Dog food wes mixed with the following three types of the composition so es to provide a dally intake of 0.1g per 1 kg of body weight; the composition obtained in Exemple 1 for group A, the composition obtained in Reference Example 1 for group B, and lectose elone for group C. The dogs were fed three times a day. Each of the components in 1 gram of the composition given to eech group is identified in Teble 1.

The ebove experiment wes conducted over e 2 month period, during which the condition of the skin was observed on the besis of the evidence of itching, redness, eczema, alopecia end crusts. The results are shown in Teble 2.

Table 1

Eech component in 1 gram of the composition given to each group (mg)			
	Group A	Group B	Group C
γ-linolenic ecid	42	42	0
Biotin	1.6	1.6	0
Korolec D	500	0	0
Lactose	0	500	1000

Table 2

Number of dogs suffering from dermatosis			
	Group A	Group B	Group C
Number of dogs	1	4	6

As shown in Table 2, dermatosis can be prevented by feeding the dog food containing the composition of the present invention to dogs.

Experimental Example 2 Prophylactic effect in dogs

Six household-bred dogs having a body weight of 5.0 ± 1.0 kg and with a history of dermatosis were arbitrarily sel cted. Separately from dog food, the composition obtained in Example 1 was ingested once a day,

In an amount f 0.1g par 1 kg of body waight.

Tha xpariment was conducted over a 2 month period, during which tha c ndition of tha skin was observed on the basis of tha avidance of itching, redness, czama, alopecia and crusts. It was observad that dermatosis occurred in only 2 dogs.

Experimantal Exampla 3 Prophylactic effact in cats

Eighteen household-brad cats having a body waight of 3.5 ± 1.0 kg and with a history of dermatosis ware arbitrarily salacted and divided into 3 groups, A, B and C, aach consisting of 6 cats. Cat food was mixed with tha following threa types of tha composition so as to provide a daily intaka of 0.1g per 1 kg of body weight; tha composition obtained in Exampla 1 for group A, tha composition obtained in Raferenca Exampla 1 for group B, and lactose alona for group C. Tha cats wera fed three times a day. Each of the components in 1 gram of tha composition given to each group was the sama as in Tebla 1.

Tha abova experiment was conducted over a 2 month period, during which tha condition of tha skin was observed on tha basis of tha evidence of itching, radness, aczama, alopecia and crusts. The results ara shown in Tabla 3.

Tabla 3

Number of cats suffering from dermatosis			
	Group A	Group B	Group C
Number of cats	0	4	6

As shown in Table 3, dermatosis can ba prevanted by feeding tha cat food containing tha composition of tha present invantion to cats.

Experimental Exampla 4 Prophylactic affect in cats

Six household-bred cats having a body waight of 3.5 ± 1.0 kg and with a history of dermetosis ware arbitrarily selacted. Separately from cat food, tha composition obtained in Exampla 1 was ingested once a day, in an amount of 0.1g par 1 kg of body waight.

The axparimant was conducted over a 2 month parod, during which the condition of tha skin was obsarvad on tha basis of tha avidence of itching, redness, eczama, alopacia and crusts. It was observed that dermatosis occurred in only 1 cat.

Experimantal Exampla 5

Tharepeutic effact in cats (affect whan used in combination with an antipruritic agant)

Fiftean cats heving a body weight of 3.5 ± 1.0 kg and suffaring from eczema such as redness, atc. were dividad into 5 groups, A, B, C, D and E, aach consisting of 3 cets. Saparately from cat food, tha following three typas of tha composition wera ingested once a day over a period of 10 days, in an amount of 0.3g par 1 kg of body weight, tha composition obtainad in Exampla 1 to groups A and D, tha composition obtained in Reference Exampla 1 to group B, and lactosa alona to groups C and E. The condition of the skin was observad. Pradnisolona ("Prednisolona injection", product of Fujita Salyaku Co.), which was a darmatotharapautic medicina was subcutaneously injactad once a day to groups D and E in an amount of 0.4 mg/kg body weight. Each of tha componants in 1 gram of tha composition given to aach group is shown in Tabla 4.

Table 4 Each component in 1 gram of the composition (mg)

	Group A	Group B	Group C	Group D*	Group E*
γ-linolenic acid	42	42	0	42	0
Biotin	1.6	1.6	0	1.6	0
Korolac D	500	0	0	500	0
Lactose	0	500	1000	0	1000

Note: The "*" denotes the groups having simultaneous administration of prednisolone.

The symptoms on the 3rd, 7th and 10th day from the initial administration of prednisolone were determined for each cat on the basis of the score shown in Table 5. The average scores were obtained for each group, end shown in Table 6.

Table 5

Score for determination of skin symptoms	
Skin symptoms	Scale
Completely cured	3
Considerably cured	2
Somewhet cured	1
Remained unchenged	0
Somewhet worse	-1
Considerably worse	-2
Extremely worse	-3

Table 6 Determination of skin symptoms

	Group A	Group B	Group C	Group D	Group E
3rd day	0.3	0	-1.3	1.0	0.7
7th day	1.0	0.7	-3.0	3.0	1.7
10th day	2.0	0.7	NT	NT	2.0

Note: NT: not tested
(1) The skin symptoms in three cats of Group C got worse on the 7th day from the initial administration, and therefore the test was suspended.
(2) The skin in all 3 cats of Group D was completely recovered on the 7th day from the initial administration, and therefore th test was suspended.

As shown in Table 6, dermatosis is treated by having cats ingest the prescription diet composition of the

pres nt invention, end the therapeutic effect is enhenced when it is used in combinati n with a dermatoth r-ap utic medicine. it is possible to reduce the dosage of the dermatotherap utic medicin , and thus to minimize the occurrence of side effects due to the dermatotherapeutic medicin .

Experimental Example 6 Therapeutic effect in dogs

Ten dogs having a body weight of 10.0 ± 1.0 kg and suffering from slight eczema such es redness, etc. were divided into 5 Groups, A, B, C, D end E, each consisting of 2 dogs. Separately from dog food, the three types of the composition wera ingested once e day over e period of 14 days, in an amount of 0.25g per 1 kg of body weight. The composition obtained in Example 2 to Group A, the compositions obtained in Referance Examples 2, 3 end 4 to Groups B, C and D, respectively, and lactose alone to Group E. The condition of the skin was observed. Each of the components in 1 grem of the composition given to each group is shown in Table 7.

Teble 7

Each component in 1 gram of the composition (mg)					
	Group A	Group B	Group C	Group D	Group E
Biotin	1.6	1.6	0.016	0	0
Korolac D	500	0	0	500	0
Lactose	429	920	999.2	500	1000

The symptoms on the 3rd, 7th and 14th day were determined for each dog on the basis of the score shown in Table 5. The average scores were obtained for each group, end shown in Teble 8.

Table 8 Determination of skin symptoms

	Group A	Group B	Group C	Group D	Group E
3rd day	0.5	0	-1.0	-0.5	-1.0
7th day	1.0	0.5	-2.5	-1.5	-2.5
14th day	1.5	0.5	NT	NT	NT

Note: (1) NT: not tested
The skin symptoms in the dogs of Groups C, D and E got worse on the 7th day from the initial intake, and therefore the test was suspended.

As shown in Teble 8, the composition of the present invention exhibited a more notable therapeutic effect against dermatosis then the compositions containing biotin or bifidobacterie alone.

Experimental Example 7 Therapeutic effect in dogs

To e Shih Tzu dog (3 years old, female, body weight 5.5 kg) suffering with eczema and pruritus in the tail head and pubic regions due to flea parasites, 1.25 mg of prednisolone was orally edministerad twice a day over a period of 5 days, separately from dog food. The skin symptoms wera not alleviated, and deposition of a light pigment was elso observed in the pubic ragion.

The dog was subjected to once-a-day intake of 0.55g of the comp sition obtained in Example 1, while orally administering 1.25 mg of prednisolone twice a day. Th pruritus, eczema and pigment disappeared on the 3rd day from the initial intek of the composition.

Experimental Example 8 Therapeutic effect in dogs

To an Akita-dog (3 years old, male, body weight 33.0 kg) emitting a foul odor due to inflammation and purulance of the external auditory canal of the left ear, four tablets of Jumihaijo (product of Shinwa Seiyaku Co.) was orally administered once a day, and also 6.6g of the composition obtained in Example 1 was ingested once a day, separately from dog food. The diseased part was dried and healed on the 3rd day from the initial intake of the composition.

Experimental Example 9 Therapeutic effect in cats

To a Japanese cat (10 years old, male, body weight 4.7 kg) suffering with crusts, pruritus, inflammation, alopecia on the left hind leg, and eczema of the dorsum, 4.7 mg of prednisolone and 118 mg of chloromycetin were subcutaneously injected once a day and also 1.4g of the composition obtained in Example 1 was ingested once a dey, separately from cat food. On the 7th day from the initial intake, the dorsal eczema was still slightly observed, and the pruritus and inflammation had disappeared.

Experimental Example 10 Therapeutic effect of the α-linolenic acid-containing composition in dogs

By a Shih Tzu dog (3 years old, male, body weight 4.9 kg) suffering with slight eczema including redness in the tail head region, 0.5g of the composition obtained in Example 3 was ingested twice a day, separately from dog food. On the 10th day from the initial intake, the diseased part healed.

Experimental Example 11 Therapeutic effect of the DHA-containing composition in cats

By a Japanese cat (9 years old, female, body weight 4.9 kg) suffering with slight eczema including redness in the dorsal region, 0.5g of the composition obtained in Example 4 was ingested twice a day, separately from cat food. On the 10th dey from the initial intake of the composition, the diseased part healed.

Experimental Example 12 Therapeutic effect of the lactic acid bacteria containing composition in dog

A Shih Tzu dog (4 years old, male, body weight 6.0 kg) suffering from slight eczema including redness in the tail head region, ingested twice a day 0.5g of the composition obtained in Example 5, separately from dog food. On the 7th day from the initial intake of the composition, the diseased part healed.

Experimental Example 13 Therapeutic effect of the butyric acid bacteria containing composition in dogs

A Shih Tzu dog (3 years old, male, body weight 5.5 kg) suffering with slight eczema including redness in the tail head region ingested twice a day 0.5g of the composition obtained in Example 8, separately from dog food. On the 7th dey from the initial intake of the composition, the diseased part healed.

Claims

1. A composition for use as a diet composition for a pet animal, which comprisas an antiflatulent; and at laest one of a polyunsaturated fatty acid and biotin.

2. A composition according to claim 1, wherein the polyunsatureted fatty acid is selected from γ-linolenic acid, α-linolenic acid, eicosepentaenoic acid and docosahexaenoic acid.

3. A composition according to either of claims 1 and 2, wherein the antiflatulent is cells of a bacterium.

4. A composition according to claim 3, wherein the bacterium is selected from lactic acid bacterium, bifid bacterium, butyric acid becterium and bacillus.

5. A composition according to any preceding claim, wherein biotin is contained in a proportion of 0.01 - 1.0 wt%.

6. A composition according to any preceding claim, wherein the polyunsaturated fatty acid is contained in

a proportion of 0.5 - 50 wt%.

7. A composition according t any preceding claim, wherein tha antiflatulent is contained in a prop rtion of 0.00001 - 10% wt%.

8. A composition for usa as a diat composition for a pat animal, which comprises γ-linolanic acid, an anti-flatulant and biotin.

9. Usa of a composition of any preceding claims for tha preparation of a medicament for tha treatment of dermatosis in a pat animal.

10. Use of a composition according to claim 9, wherain tha pet animal is a dog or cet.

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(54) Prescription diet composition for pet animals.

(57) The present invention provides a prescription diet composition containing a poly-unsaturated fatty acid such as γ-linolenic acid, α-linolenic acid and docosahexaenoic acid, and/or biotin, and an antiflatulent such as a lactic acid bacterium, a bifid bacterium, a butyric acid bacterium and a bacillus. The prescription diet composition is useful for the prevention and treatment of pet dermatosis.

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European Patent Office

EUROPEAN SEARCH REPORT

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DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
Y	RECUEIL OE MEDECINE VETERINAIRE, vol.165, no.6/7, 1989, FR pages 651 - 664 P. NGUYEN ET AL. 'Alimentation et troubles cutanes chez le chien' * page 653, column 2, paragraph 2 - page 656, column 1, paragraph 1 * * page 659, column 2, paragraph 4 - page 662, column 2, paragraph 5 * ---	1,9,10	A23K1/16 A23K1/18 A61K35/74 A61K31/20 A61K31/41
Y	EP-A-0 241 097 (COOPERATIEVE CONOENSFABRIEK "FRIESLAND" W.A.) * page 2, line 26 - page 3, line 10 * * page 4, line 3 - line 7 * * example 5 * * examples 1,7-9 * ---	1,9,10	
Y	OATABASE WPI Week 9248, Oerwent Publications Ltd., London, GB; AN 92-393236 & JP-A-4 290 820 (IOEMITSU PETROCHEM CO) 15 October 1992 * abstract * ---	1,9,10	TECHNICAL FIELDS SEARCHED (Int.Cl.5) A23K A61K
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A	GB-A-1 503 094 (NISSHIN FLOUR MILLING CO., LTO.) * claims 1-7 * ---	1,3,4	
D	& JP-A-51 118 827 (NISSHIN FLOUR MILLING CO., LTO.) --- -/--		

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	16 January 1995	Oekeirel, M

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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A : technological background
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EUROPEAN SEARCH REPORT

Application Number
EP 94 30 0551

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.5)
D,A	RECUEIL DE MEDECINE VETERINAIRE, vol.158, no.12, 1982, FR pages 821 - 826 D. FROMAGEOT ET AL. 'Influence de l'alimentation du chien sur sa peau et son pelage' * page 822, column 1, last paragraph - page 826, column 2, last paragraph *	1,9,10	
A	RECUEIL DE MEDECINE VETERINAIRE, vol.166, no.2, 1990, FR pages 87 - 94 D. FROMAGEOT ET AL. 'Intérêt potentiel de la biotine en dermatologie canine' * the whole document *	1,5,9,10	
A	FR-A-2 508 282 (SCHULER RUDOLF ET AL.) * page 4, line 13 - line 19 * * claims 1,6-8,16 *	3,4	
			TECHNICAL FIELDS SEARCHED (Int.Cl.5)

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